

CLAIMS

1. A packing case (1, 60, 106, 130, 267, 340, 342, 420, 514) in two sections, comprising two shapes made of corrugated board sheet material, namely a first shape (13, 31, 62, 102, 131, 141, 251, 302, 343, 400, 501) forming a tray (12) and a second shape (21, 40, 73, 103, 142, 259, 350, 359, 401, 502) forming a lid (3) imbricated with said tray, characterized in that the case comprises a first transverse side wall (4, 81) arranged to be grasped by a user, joined to the rest of the case by partially precut connecting lines (7, 8, 9; 44, 44', 44'', 38, 52; 71, 80; 109', 114', 116'; 134, 135, 136, 137) allowing said first wall to be manually torn off by the user from the rest of the case,

and in that one for (the other side walls) (15, 20; 64, 68; 104, 104') of the tray are fixed respectively to one or the other side walls of the lid solely by one or more partially precut portions ((16, 17; 46; 66; 120, 120'; 156, 156'; 266; 345, 346; 416) and/or one or more gluing points, enabling a separation between walls by manual parting achieved by the application of a force perpendicularly to (the walls).

2. The case as claimed in claim 1, characterized in that (the first transverse side wall) is formed by the gluing together of two first side walls (5, 6; 70, 79) of the lid and tray respectively, one upon the other.

3. The case as claimed in any one of the preceding claims, characterized in that the partially precut, (upper connecting line) (44'') of the first side wall of the case with the lid is situated on the lid.

4. The case as claimed in either of claims 1 and 2, characterized in that (the partially precut) upper connecting line (7, 44) of the first side wall of the case with the lid is situated on said first wall (6, 43) so as

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to leave an upper fascia (26) attached to the lid following tearing-off.

5 6. The case as claimed in either of claims 1 and 2, characterized in that the partially precut, upper connecting line (44') of the first transverse side wall of the case with the lid coincides with the edge of the upper face of the lid.

10 7. The case as claimed in any one of the preceding claims, characterized in that it comprises means (7') for grasping the first side wall of the case, comprising a handle constituted by a recess centered on the upper connecting line (7) of said wall.

15 8. The case as claimed in any one of the preceding claims, characterized in that the partially precut portion(s) (46) and/or gluing points belong to the second transverse side wall (42) of the case, opposite to the tear-off, first transverse side wall (43).

20 9. The case as claimed in any one of claims 1 to 6, characterized in that the case comprises at least two partially precut portions (16, 17, 66; 120, 120'; 156'; 345; 346; 416) or gluing points respectively situated at some place on the longitudinal side walls of the case.

25 9. The case (1, 60) as claimed in any one of the preceding claims, characterized in that the lid is imbricated in the tray.

10. The case as claimed in any one of the preceding claims, characterized in that the partially precut portion(s) (16, 17; 66) belong to the tray.

30 11. The case as claimed in any one of the preceding claims, characterized in that the partially precut portion(s) (16, 17; 46; 66) are precut according to an open line.

35 12. The case as claimed in any one of claims 1 to 10, characterized in that the partially precut section(s) of leaves are cut according to a closed line.

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13. The case as claimed in any one of the preceding claims, characterized in that the first shape (13, 31, 62) comprises a series of three leaves, namely a central leaf (14, 32, 63) forming the bottom of the tray laterally joined by first fold lines (33) to two side leaves (15, 34, 64) forming, at least in part, the longitudinal side walls of said tray, said series comprising at least one transverse flap (5, 70) situated on one side of said leaves to which it is joined by at least one partially precut, second fold line (9, 9', 38, 71) perpendicular to the first fold lines, said transverse flap (5, 70) forming, at least in part, the first transverse side wall of the tray.

14. The case as claimed in claim 13, characterized in that each side leaf (15) comprises two partially precut portions (16, 17).

15. The case as claimed in any one of the preceding claims, characterized in that the second shape comprises three panels (41, 42, 43; 74, 75), namely a rectangular central panel (41, 74) forming the upper face of the lid of the case laterally joined by third fold lines (42', 44') to two side panels (42, 43; 75) forming, at least in part, the side walls of the case, joined together with the first shape respectively by said lateral, partially precut portion(s) (46), or said gluing points, on the one hand, and by gluing lines, on the other hand.

16. The case as claimed in any one of the preceding claims, characterized in that the second shape (73) comprises two sets of side flaps (76, 77, 78, 79) situated at some place on said panels, to which they are joined by fourth fold lines situated facing said second fold lines (71, 72) of the first shape.

17. The case as claimed in any one of claims 1 to 14, characterized in that the second shape (21) comprises at least four panels (22) respectively mutually joined by fourth fold lines (23, 23') parallel to the second fold

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lines (9') of the first shape, and an end gluing tongue (22'), the four panels comprising a set of flaps (24, 25) situated on the side opposite to the first shape (13).

18. The case as claimed in any one of the preceding
5 claims, characterized in that each leaf (32, 34; 63, 64) of the first shape comprises a transverse flap, namely a central flap (70) joined to the central leaf and forming a partially precut bottom portion, and two side flaps joined to the side leaves and glued on said central flap.

10 19. The case as claimed in any one of claims 1 to 12, characterized in that each shape comprises a series of four primary leaves (104, 104', 104'', 104'''; 110, 111, 112, 113; 146, 147, 148, 149; 160, 162, 164, 166) terminated by a fixing tongue (140; 130; 153; 168), said
15 primary leaves and said tongue being mutually joined by mutually parallel first fold lines (105, 105'; 114, 114'; 145, 145'; 169, 169'), directly or by means of secondary leaves (150, 151, 152, 153; 161, 163, 165, 167), and an assembly (108, 115; 155, 170) of first side flaps,
20 disposed on one side of said series of primary leaves and joined to the latter by second fold lines (109, 109'; 116, 116'; 154, 154'; 171, 171') perpendicular to said first fold lines and intended to form, at least partially, the bottom of the tray, on the one hand, and the top of the
25 upper section of the case, on the other hand.

20. The case as claimed in claim 19, characterized in that the fixing tongue (113a, 168) of the second element extends along one section only of the side edge of the adjacent leaf to which it is joined, above the fixing
30 tongue of the first element.

21. The case as claimed in any one of claims 19 and 20, characterized in that the primary leaves (146, 147, 148, 149; 160, 162, 164, 66) are mutually separated by secondary leaves (150, 151, 152, 153; 161, 163, 165, 167)
35 to form an eight-sided case, with cut corners.

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22. An assembly of shapes for the formation of a case, characterized in that it comprises two shapes, each respectively formed from a central leaf or panel and from side leaves or panels, namely a first shape intended to form a tray and a second shape intended to form the lid of the case,

the first shape (13, 31, 62) comprising a second transverse flap or at least one side leaf (15, 64) joined to the central leaf and arranged to be joined together to an adjacent side panel (20, 42, 75) by means of at least one partially precut portion (16, 17; 46; 66) belonging to one of the shapes and glued to the other shape,

and a first transverse flap (5, 70) joined on the other side to the central leaf (14, 32, 63) by a partially precut connecting line (9, 9'; 38, 71), and in that a side panel of the second shape is fit to be glued to the first transverse flap and is joined to the central panel by a partially precut connecting line.

23. The assembly of shapes as claimed in claim 22, characterized in that the side leaves (34, 64) of the first shape each comprise a flap, respectively joined to the corresponding leaf by a partially precut fold line on the side of the first transverse flap (5, 70).

24. The assembly of shapes as claimed in claim 22, characterized in that the first shape comprises at least one partially precut flap and the second shape at least four panels (22), one of which joined to its two adjacent panels by partially precut fold lines (23') and provided with a flap joined directly or by means of a fascia-forming panel portion to said panel, and intended to form the first vertical bottom wall of the case, by a partially precut fold line.

25. The assembly (1) of shapes for a packing case, as claimed in claim 22, characterized in that each element comprises a series of four primary leaves (104, 104', 104'', 104'''; 110, 111, 112, 113, 143; 160, 162, 164,

166) terminated by a fixing tongue (104a, 113a), said primary leaves and said tongue being mutually joined by mutually parallel first fold lines (105, 105'; 114, 114'; 145, 145'; 169, 169'), directly or by means of secondary
5 leaves (150, 151, 152, 163; 161, 163, 165, 167), and an assembly (108, 115; 155, 70) of first side flaps, disposed on one side of said series of primary leaves and joined to the latter by second fold lines (109, 109'; 116, 116'; 154, 154'; 171, 171') perpendicular to said first fold
10 lines and intended to form, at least partially, the bottom of the tray-forming first element, on the one hand, and the top of the second element, on the other hand, the two elements being arranged to be mutually joined by at least one precut leaf portion (120; 156, 156') in one of said
15 primary leaves of the first element, referred to as the outer leaf (104; 146, 148), said portion being fixed to the corresponding primary leaf facing the second element, referred to as the inner leaf,

and in that a transverse leaf (104'') of the first
20 shape and a transverse leaf (111) of the second shape are joined to the flap and to the corresponding adjacent leaves by precut connecting lines (109', 105'; 114', 116'; 154', 145'; 169', 171').

26. The assembly of shapes as claimed in any one of
25 claims 22 to 25, characterized in that the precut connecting line(s) which are to correspond to the connecting line of the first side wall of the case, once formed with the lid, are situated on the lid.

27. The assembly of shapes as claimed in any one of
30 claims 22 to 25, characterized in that the precut upper connecting line which is to correspond to the connecting line of the first side wall of the case, once formed, coincides with the upper edge of the case, once formed.

28. The assembly of shapes as claimed in any one of
35 claims 22 to 27, characterized in that the precut leaf

portion(s) (120; 156, 156') are cut according to a closed line.

29. The assembly of shapes as claimed in any one of claims 22 to 27, characterized in that the precut leaf
5 portion(s) are cut according to an open line.

30. The assembly of shapes as claimed in claim 25, characterized in that the fixing tongue (113a, 168) of the second element extends along one section only of the side edge of the adjacent leaf to which it is joined, above the
10 fixing tongue of the first element.

31. The assembly of shapes as claimed in any one of claims 22 to 30, characterized in that the primary leaves (146, 147, 148, 149; 160, 162, 164, 166) are mutually separated by secondary leaves (150, 151, 152, 153; 161,
15 163, 165, 167) to form an eight-sided case, with cut corners.

32. The assembly of shapes as claimed in any one of claims 22 to 31, characterized in that the concretization is effected by winding the two shapes which have
20 previously been glued together and joined together by at least one of said first portions around a mass of predetermined dimensions.

33. The assembly of shapes (130, 142) as claimed in any one of claims 22 to 32, characterized in that the precut
25 portions run obliquely from the junctions between first and second fold lines toward the outside of the first shape.

34. The assembly of shapes as claimed in any one of claims 22 to 33, characterized in that the precut portions
30 belong to the first shape.

35. The assembly of shapes for making a case as claimed in claim 22, characterized in that it comprises two shapes, each respectively formed from a central leaf or panel and from two side leaves or panels, namely a first
35 shape intended to form a tray and a second shape intended to form an upper section of the case, said shapes being

fit to be mutually joined together by their respective side leaves and panels solely by means of at least two lateral precut portions belonging to one of the shapes and fit to be glued to the other shape.

5 36. The assembly of shapes as claimed in claim 35, characterized in that the central leaf of the first shape comprises a central flap in the extension of said bottom provided with two precut bottom portions and the side
10 leaves of the first shape each comprise a side flap fit to be glued respectively on said precut bottom portions.

37. The assembly of shapes as claimed in either of claims 35 and 36, characterized in that the central panel of the second shape comprises a central flap in the extension of said panel provided with two precut lid portions and the
15 side panels of the second shape each comprise a side flap fit to be glued respectively on said precut lid portions.

38. The assembly of shapes as claimed in claim 35, characterized in that the first shape and the second shape each comprise a set of one or more flaps, said sets being
20 respectively joined to the corresponding leaves and panels by precut fold lines.

39. The assembly as claimed in any one of claims 35 to 38, characterized in that the lateral precut portions run obliquely from the junction between first and second fold
25 lines toward the outside of the first shape.

40. The assembly as claimed in claim 35, characterized in that the first shape comprises three precut flaps and the second shape at least four panels, one of which provided with a flap joined to said panel, intended to form the
30 bottom of the case, by a precut fold line.

41. A process for the realization of a packing case as claimed in any one of claims 1 to 21.

42. The process as claimed in claim 41, for the realization of a packing case (1, 18, 36, 67, 68, 82, 91,
35 110, 118, 127) of polygonal cross section out of two shapes made of corrugated board sheet material, namely a

first shape (3, 20, 37, 51, 69, 85, 96, 111, 130, 153) fit to form a display tray and a second shape (4, 27, 45, 59, 72, 85', 100, 112, 123, 142, 155) fit to form the upper section of the case, characterized in that,

5 one of the shapes comprising at least two precut portions (12, 24, 43, 66, 75, 76, 78, 84, 99, 115, 121, 128) in said shape, characterized in that

said portions are flat-coated with glue,

10 one of said portions belonging to one of the shapes is applied flat onto the other portion, the assembly of shapes which is thus joined together is wound around a mass of determined dimensions,

15 then the other previously glue-coated portion is applied to the other shape, following winding and folding-down around said mass, in such a way as to form said packing case, the display tray of which can be manually separated from the upper section of the case by simple traction of one of the shapes toward the outside of the case close to said precut portions.

20 43. A machine (150) for the realization of a packing case of polygonal cross section out of two shapes made of corrugated board sheet material, namely a first shape (3, 20, 37, 51, 69, 85, 96, 111, 130, 153) fit to provide a display tray and a second shape (4, 27, 45, 59, 72, 85', 25 100, 112, 123, 142, 155) fit to form the upper section of the case,

characterized in that,

30 one of the shapes comprising at least two precut portions (12, 24, 43, 66, 75, 76, 78, 84, 99, 115, 121, 138) in said shape, respectively situated at some place on said shape relative to a longitudinal axis, said machine comprises

- means (162) for coating said determined portions with glue,
35 - means (152, 154, 156) for positioning the shapes one upon the other to allow a first of the precut portions to

be glued onto the other shape, the fold lines of the one of the shapes being placed relative to the fold lines of the other shape to allow winding around a mass of determined dimensions,

- 5 - application means (157) for fixing said first precut portion onto the other shape by gluing,
- and means (160, 164, 165) for forming the box by winding and folding-down of the shapes thus joined together around a mass (160) of determined dimensions, for fixing solely
10 by gluing.

44. The machine as claimed in claim 43, characterized in that the mass of determined dimensions is a mandrel (160) of polygonal cross section.

45. The machine as claimed in claim 43, characterized in
15 that it is arranged so that the mass of determined dimensions is constituted by products to be packed.

46. The machine as claimed in any one of claims 43 to 45, characterized in that it comprises two feed magazines (152, 154) disposed at some place on the machine for
20 forming of the shapes.

47. A process for opening a case and for shelving the product contained therein, characterized in that a transverse wall of the case is manually torn off, the walls and the lid of the case are manually separated from
25 the bottom, the bottom is pulled horizontally in order to free the base of the products which are on top of it, and then the lid is removed in order to free completely the products contained therein.

48. The process as claimed in claim 47 for opening a case
30 (1, 60) of polygonal cross section formed out of two shapes made of cardboard or corrugated board sheet material, namely a first shape (13, 36, 62) fit to form a tray (2) and a second shape (21, 40, 73) fit to form the lid (3) of the case, said case being filled with rigid or
35 semi-rigid products (54, 82), characterized in that, the case comprising a first transverse side wall (64, 81)

joined to the rest of the packing by partially precut connecting lines allowing tearing-off:

- the first transverse side wall (4, 81) is torn off manually, in one stroke,

5 - the walls of the rest of the tray are manually separated, by perpendicular traction, from the walls of the rest of the lid, said walls being solely fixed together by means of partially precut wall portions (16, 17; 46; 66) or by easily separable gluing points,

10 - the tray (2) is pulled horizontally in order to free the tray from the products which are on top of it,

- then the lid (3) is removed in order to free completely the products contained therein.

49. The case-opening process as claimed in claim 48, 15 characterized in that, the lid (3) comprising a fascia (26) following tearing-off of the first transverse side wall (4), the lid (3) is pivoted upward in order to slide the fascia (26) away from the products (54) prior to horizontal pulling of the lid (3).